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AN AUDIT OF INSTRUMENTAL VAGINAL DELIVERY IN AMINU KANO TEACHING HOSPITAL, KANO

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ABSTRACT

Context: Operative vaginal delivery is used to shorten the second stage of labour

Objective: The aim of this study is to determine the incidence of instrumental vaginal deliveries in a large teaching hospital.

Study design and setting: Descriptive study involving 354 women, who either had forceps or vacuum operative vaginal deliveries including maternal and fetal outcome.

Results: One thousand two hundred and thirty three deliveries were recorded during the study period. Of this, 354 had operative vaginal delivery giving an incidence of 28.7%. Most of the patients who had either forceps or vacuum delivery were between the age of 14 – 19 years and 215 were also primigravidas.

The commonest indication for both procedures was delay in second stage and fetal distress. 47.2% of the babies delivered by forceps had fifth minute apgar score >6. 16.4% of babies delivered by vacuum had fifth minute Apgar score > 6.

Fifty-Five patients had forceps delivery, while 299 patients were delivered using vacuum extractor. The major complication in the forceps group was Vesico-vaginal fistula and third degree perineal tear in the vacuum.

Conclusion: The commonest indication for instrumental vaginal delivery is delay in second stage. Most of the patients are young primigravidas. Despite the high incidence of operative vaginal delivery in this series, we recorded low morbidity.

Keywords: Forceps, Vacuum Extractor, Maternal And Fetal Morbidity

INTRODUCTION

The use of instrument to deliver women in labour is a long standing tradition, as old as the obstetrics itself.

Operative vaginal delivery may be indicated for several reasons ranging from prolonged second stage to maternal exhaustion. Although the rates have remained between 10-15%, these procedures are still associated with morbidity to both mother and baby.[1] The main type of procedures are forceps and vacuum extraction, both are effective methods of achieving vaginal delivery with similar indications[2].

Beside the natural forces coming into play with the mother pushing, the ventouse has an in-built safety mechanism where the cup pulls-off from the fetal scalp whenever excessive traction is applied[3].

The forceps nevertheless has some advantages over vacuum. In the hands of experienced and skilled operator, it effects delivery faster than vacuum and is very useful in cases of fetal distress and cord prolapse. As regards maternal and fetal complications, it is widely believed that ventouse has an overall lower complication rate. Despite this, it is advisable that trainee be taught and should be versatile in the use of both instruments, and have them available in every obstetric unit.

Instrumental vaginal deliveries have a high acceptance in the developing world, because of lack of efficient human and material resources to effectively carry out safe and timely caesarian section[4]. The decision to which method is chosen between forceps and vacuum is based entirely on the clinician experience and preference. The goal should be to minimize the risk of morbidity, and where this occurs to minimize the likelihood of litigation without limiting maternal choice.

OBJECTIVE

To determine the incidence of instrumental vaginal deliveries, maternal and fetal outcome in a tertiary center.

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METHOD

Medical records of all patients, who had had instrumental vaginal delivery between January 2001 and December 2005, were retrieved using computerized data base. Details on indications, type of instrument (forceps or vacuum), maternal/fetal complication, gestational age, age, parity and type of anaesthesia were carefully reviewed.

DISCUSSION

The frequency of instrumental vaginal delivery (IVD) is estimated to be 10 to 15% of all vaginal deliveries, [4] in this study our incidence of IVD is 28.75% which is higher than Bailey but similar to Oguniyi from Ilesa[5]. This may be accounted for by the quick resort to vacuum extraction by most of the middle level staff in the department.

The chamberlains invented and introduce forceps into obstetric practice in the 17th century. The instrument has undergone several modifications before coming to its present state. Vacuum extractor was introduced as a practical reality in obstetrics by Malmstom in 1957 [6,7].

The vacuum extractor may be used as an alternative to obstetric forceps to deliver a patient whose cervix is fully dilated and in whom forceps would normally be used. The delivery is probably more comfortable to the patient, since the additional distention of the perineum is less with vacuum.

There are guidelines for performing IVD, including fully dilated cervix and correct indications, suitable presentation, known position, engaged head, and ruptured membranes [8,9]. In all our patients these were strictly followed, where this was not adhered to we notice failure of the procedure as recorded in about five of the women. The commonest reason for this failure is unrecognized disproportion, where these occur the women were delivered by caesarean section.

The maternal risk of the vacuum recorded in our patients seems minimal, and the fetal results appear comparable with those of forceps delivery.

The special disadvantage of the instrument is scalp trauma [10,11]. None was recorded in this series; possibly due to careful technique and patient selection. As most complication in this regards relate to prolonged applications and the use of the vacuum extractor in preterm fetuses, we avoided such situation.

The use of ventouse in our set-up more than the forceps is due to the fact that, the technique is easier to teach and learn by residents.

Most of the IVD in our series were vacuum (299 vs. 55) compare to forceps. This is supported by similar studies from USA[11], where Bofill et al found forceps deliveries comprising less than 3% of the total deliveries. In this study forceps delivery constitute 4.4% of the total.

The indications for IVD are categorized into maternal and fetal indications. Prolonged second stage was the commonest among our patients constituting 48%.

Either mother or infant may experience complications related to IVD especially forceps. Maternal complications in our women were largely related to damage to the pelvic supportive tissues, and we recorded a case of 3rd degree perineal tear and Vesico-vaginal fistula (VVF). In a large series, it was found that IVD were associated with an increased risk of both damage to rectal sphincter leading to faecal incontinence and concluded that, a mediolateral episiotomy may reduce risk[5].

All our patients who had IVD were given a mediolateral episiotomy and these may be the reason why no case of faecal incontinence was recorded. The case of 3rd degree perineal tear was done by a registrar who was inexperienced. The patient with VVF had a prolonged second stage at home and may have sustained the fistula, well before forceps application, as the neonatal outcome was a macerated stillbirth.

Forceps delivery is associated with an increased incidence of forceps marks and bruising of the fetal face[12,13]. We recorded no such incidence in our babies, probably because the majority of the forceps deliveries were done by consultants and were outlet/low forceps during the study period.

The risk of maternal and fetal complications are increased if forceps delivery is attempted after a failed vacuum extraction[14,15,16], the risk of failed vacuum delivery in our patients was 2.2% and none had attempted forceps after failed vacuum, they were all delivered by caesarean section.

Given the current state of knowledge, it is the position of the American College of Obstetricians and Gynecologists, that forceps delivery remains an acceptable and safe option for delivery[17].

CONCLUSION

Majority of the patients had vacuum delivery >70% compared to forceps, probably because of its advantages over forceps. The commonest indication for IVD was prolonged second stage in this series.

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Results

Table AGE VS INSTRUMENT

AGE	FORCEPS	VACUUM
14-19	29	100
20-24	8	84
25-29	5	61
30-34	6	22
35-39	5	26
40-44	2	6
TOTAL	55	299

Table
PARITY VS INSTRUMENT

PARITY	FORCEPS	VACUUM
0	35	183
1-4	17	86
>5	3	30
TOTAL	55	299

Table
INDICATIONS FOR INSTRUMENTAL VAGINAL DELIVERY

INDICATIONS	FORCEPS%	VACUUM%
Delayed 2nd Stage	36.4	11.7
Eclampsia	36.3	16.4
Fetal Distress	9.1	23.4
Intrapartum Bleeding	0.0	5.8
Maternal Exhaustion	9.1	38.8
Others	9.1	3.3
TOTAL	100.0	100.0